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VERMETTE & CO. SUITE 320 - 1177 WEST HASTINGS STREET VANCOUVER, BC V6E2K3 CANADA			EXAMINER WONG, BLANCHE	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/756,680

Applicant(s)

CAM ET AL.

Examiner

Blanche Wong

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10,12,13 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Page No(s)/Mail Date _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the method of claim 1, esp. limitations (b)-(d), the de-skewing circuit in claim 14 and the de-skewing circuit in claim 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
2. The drawings are objected to because labeling in Fig. 19 is not descriptive. That is, a person of ordinary skill in the art cannot understand the invention in Fig. 19 from the alpha-numeric labeling.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 1-8,10,12,13** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "transmitting the in-band portion in the data path from one of the first and second layer devices to another of said first and second layer devices, and transmitting the out-of-band portion outside of the data path from the another of the first and second layer devices to one of the first and second layer devices" (p.6, para. 1), does not reasonably provide enablement for "transmitting the in-band portion of said control information along a physical path for data from one of said

first and second layer devices to another of said first and second layer devices ... transmitting the out-of-band portion of said control information along a physical path ... different than said physical path for data ..." as recited in claim 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Specification recites the in-band portion is in the data path and the out-of band portion is outside the data path, and specifically the data path or not. In two attempts (Amendments dated February 20, 2007 and June 2, 2008), Applicant has tried to convey the data path as some hard-wired path or physical path respectively. If Applicant is saying that the data path is the same as hard-wired path, Specification does not disclose such a limitation. (See Also Office action dated May 14, 2007) If Applicant is saying that the data path is the same as some physical path, Examiner respectfully disagrees. In the context of this invention, data and control signals are separated. Therefore, a data path is different from a control path. A physical path can be either a data or control path.

5. **Claims 1-8,10,12,13** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "[t]he in-band portion may be transfer-specific information and the out-of-band information may be FIFO status flow control information" (p.6, para. 1), does not reasonably provide enablement for "wherein said in-band control information controls data bus lanes and not data, wherein said in-band portion is control information as to status and destination address of data being sent

and to align parallel data lines that comprise a data path and said out-of-band portion is credit-based FIFO status flow control information, and wherein said interfacing is done independently in both transmit and receive directions and a number of credits granted to each port depends on an encoded state of a corresponding port status". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

Specification does not disclose "in-band control information controls data bus lanes and not data", "status of data", "destination address of data", "credit-based FIFO", "number of credits".

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 1,3-8,9,10,12,13,15** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, it is unclear whether there are more than one first and second layer devices in "from one of said first and second layer devices to another of said first and second layer devices" in lines 6-7 because line 2 only recites "a first layer device and a second layer device". If there is a plurality of first and second layer devices, it is also unclear whether the transmission can be between two first layer

devices, between one first and one second layer devices, and/or between two second layer devices.

With regard to claim 1, it is unclear the "transmit and receive directions" in line 13 are between what.

With regard to claim 1, it is unclear what is "control/signaling" in line 16 or whether it is one or the other.

With regard to claim 1, it is unclear whether the "transmitting the in-band portion" in line 5 and "transmitting the out-of-band portion" in line 15 are in the same or opposite direction.

With regard to claim 4, it is unclear which direction or who is performing the "sending a training control pattern..." because there are more than one first and second layer devices

With regard to claim 5, it is unclear what is "a direction opposite to the data path" in lines 1-2 when there is no mention of a direction of the data path.

With regard to claim 5, it is unclear what is "a side of the interface opposite to a transmitting end" in lines 2-3 when there is no mention that there is a side of the interface toward a transmitting end, and what is the transmitting end.

With regard to claim 6, it is unclear what is "a transmitting end of the data path" in lines 1-2.

With regard to claim 6, it is unclear what are the data and control signals in line 2, and whether any of these signals are the ones in claim 1.

With regard to claim 6, it is unclear what is "MAX_T" in line 3.

With regard to claim 7, it is unclear what is meant by "overly long" in line 5.

With regard to claim 8, it is unclear required for what in "to reduce the number of bits required" in line 2.

With regard to claim 15, it is unclear which is the "receiving end of each interface" in line 27.

With regard to claim 15, it is unclear what is meant by "+/- 1" in line 28. Examiner suggests spelling it out for clarity.

With regard to claim 15, it is unclear what is meant by "bit time" in line 28.

8. There is insufficient antecedent basis for this limitation in the claim.

Claim 1, line 10, "parallel data lines".

Claim 1, line 12, "said interfacing".

Claim 1, line 14, "each port".

Claim 2, line 2, "the framing pattern".

Claim 6, line 3, "the training control pattern".

Claim 7, line 4, "transfer periods".

Claim 7, line 4, "the code".

Claim 15, line 27, "each interface".

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayanoglu et al. (U.S. Pat No. 5,822,309) in view of Ofek (U.S. Pat No. 6,760,328).

With regard to claim 1, Ayanoglu discloses a signaling and control architecture

(a) dividing control information **(signaling scheme) (a hybrid in-band and out-of-band signaling scheme, col. 12, line 9)** into an in-band portion **(in-band)** and an out-of-band **(out-of-band)** portion;

(b) transmitting the in-band portion of said control information along a hard-wired path **(ATM is a connection orientated protocol) (see ATM in Fig. 7)** for data from one **(mobiles 28, col. 3, line 58)** of said first and second layer devices to another **(peer-to-peer, col. 3, line 59)** of said first and second layer devices, wherein said in-band control information controls data bus lanes **(VCI indicates a segment)** and not data **(payload) ("in-band" using ATM cell that uses the same VCI as the user information of client payload) (In-band signaling implies using the VPI and VCI if the assigned connection with the payload type field indicating a signaling cell, col. 11, lines 53-55);**

(c) transmitting the out-of-band portion of said control information along a hard-wired path **(ATM is a connection orientated protocol) (see ATM in Fig. 7)** for control/signaling **("out-of-band" using an ATM cell that uses the standard signaling VCI) (In-band signaling implies using the VPI and VCI if the**

assigned connection with the payload type field indicating a signaling cell, col. 11, lines 53-55), different than said data path (“in-band” using an ATM cell that uses the same VCI as the user information of client payload and “out-of-band” using an ATM cell that uses the standard signaling VCI, col. 11, lines 53-55. There are two different VCIs. ATM is a connection orientated protocol. Connection are identified using VPI/VCI. The pair are not addresses. They are explicitly assigned at each segment (link between ATM nodes) of a connection when a connection is established and remain for the duration of the connection. Different VPI and/or different VCI identify different segments of a connection. Therefore, different VCIs identify different paths), from one (mobiles 28, col. 3, line 58) of said first and second layer devices to another (peer-to-peer, col. 3, line 59) of said first and second layer devices; and

(d) inserting in a data path (**in-band**) a control (**VCI**) of data signal to identify when the data path contains control information and when it contains data. whereby re-encoding of data and insertion of control information upon predetermined intervals is avoided (**“in-band” using an ATM cell that uses the same VCI as the user information of client payload and “out-of-band” using an ATM cell that uses the standard signaling VCI, col. 11, lines 53-55).**

However, Ayanoglu fails to explicitly show control information having a plurality of control word.

In an analogous art, Ofek discloses controlled data transmission by control information having a plurality of control words **(control words) (control words are used as in-band signaling to indicate data packet start and end, col. 22, lines 28-29; and)**.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine control information having a plurality of control word as taught in Ofek with Ayanoglu in order to adjust for a variety of link speeds. Ofek, col. 22, line 23.

With regard to claim 10, the combination of Ayanoglu and Ofek discloses a method according to claim 1.

Ofek further discloses a single control word of a plurality of control words **(control words)** that may contain control information **(signaling)** that applies to data preceding **(start indicates the end of the previous)** a single control word as well as data following **(end indicates the beginning of the next)** a single control word **(control words are used as in-band signaling to indicate data packet start and end, col. 22, lines 28-29)**.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine a single control word of a plurality of control words that may contain control information that applies to data preceding a single control word as well as data following a single control word as taught in Ofek with Ayanoglu in order to adjust for a variety of link speeds. Ofek, col. 22, line 23.

Allowable Subject Matter

11. **Claim 14** is allowed.
12. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claim 14, the prior art of record fails to anticipate or make obvious a de-skewing circuit, where M is an integer, comprising: "(a) M serial-in parallel-out blocks, each of said M SIPO blocks coupled to a corresponding one of said M data lines, said M SIPO blocks converting M-bit words of serial input data from said M data lines to parallel data, where M is an integer; (b) M register sets coupled to said M SIPO blocks, each of said M register sets storing most recent M-bit words of serial input data arriving on each of said M data lines; (c) a training detector block coupled to said M register sets and detecting the presence of a training pattern based on the contents of said M register sets; (d) a plurality of transition detection blocks each coupled to one of said M register sets and searching and detecting a transition in each bit position within each one of said M register sets; and (e) an aligner block coupled to said plurality of transition detection blocks selecting appropriate bits within each of said M register sets from which to read each bit in order to present a de-skewed output."

13. Claim 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Art Unit: 2619

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Blanche Wong/

Examiner, Art Unit 2619

July 24, 2008

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2619